



AEDC tested systems **Operation** **Iraq** in support of



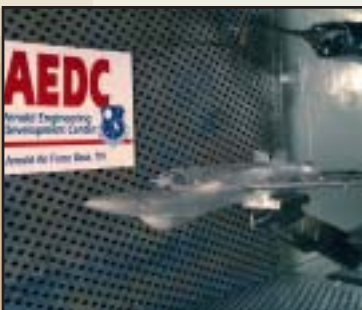
F-15 Eagle

The F-15 Eagle is an air superiority tactical fighter, supersonic with a range of 3,450 miles. Armament includes one M-61A1 20mm multibarrel gun, four AIM-120 AMRAAM, two AIM-7F/M sparrow missiles and two AIM-9L/M sidewinder missiles. The F-15E Strike Eagle is a heavily modified, two seat dual-role variant of the F-15 with totally integrated weapons systems for all weather deep interdiction missions. The F-15 has undergone aerodynamic and engine testing at AEDC since the 1970s.



F-16 Fighting Falcon

F-16 Fighting Falcon is a supersonic tactical fighter with a range of 2,000 miles. Armament includes a M-61A1 20mm multibarrel gun, up to six AIM-9 infrared missiles, AMRAAM missiles, air-to-air and air-to-surface munitions and electronic counter-measure pods. Crew number varies – F-16C has one; F-16D can have one or two. Aerodynamic and engine tests conducted in the 16-foot transonic wind tunnel at AEDC helped to increase the lethality of the F-16.



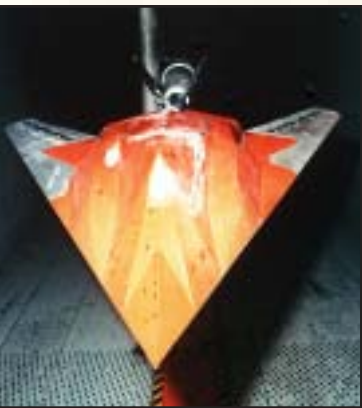
AV-8 Harrier

AV-8 Harrier IIS is a fighter-attack aircraft capable of vertical takeoffs and landings. It's a second generation V/STOL light-attack jet aircraft utilized by the Marine Corps. This aircraft provides responsive close air support for the ground forces. AEDC has done weapon store separation and engine testing for this aircraft.



A-10 Thunderbolt

The A-10 Thunderbolt II provides close air support and an airborne forward air control. The A-10 can carry one GAU-8/ A 30 mm seven-barrel Gatling gun; up to 16,000 lbs. of mixed ordnance, including 500-lb. bombs, 2,000-lb. general-purpose bombs, incendiary and Rockeye II cluster bombs, Maverick missiles and laser-guided/electro-optically guided bombs, infrared countermeasure flares, electronic countermeasure chaff and jammer pods. AEDC conducted engine testing for the A-10. Weapon store separation was tested in the center's four-foot transonic wind tunnel in 1973.



F-117 Nighthawk

The F-117 Nighthawk is a subsonic fighter/bomber with a crew of one. With a range of 650 miles, the Nighthawk has an internal weapons carriage capable of holding a variety of weapons. A model of the F-117A underwent aerodynamic and engine development testing in the center's wind tunnels, like all high-performance aircraft in service with the U.S. military.



F-14 Tomcat

The F-14 Tomcat is a supersonic, twin-engine, variable sweep wing, two-place strike fighter. It provides air superiority, fleet air defense and precision strike against ground targets. The F-14 has visual and all-weather attack capability to deliver Phoenix and Sparrow missiles and the M-61 gun and Sidewinder missiles for close in air-to-air combat. In 1989, AEDC did stores separation tests on the F-14 in the center's four-foot transonic wind tunnel. Engine testing was done in the center's Engine Testing Facility.



C-17 Globemaster

The C-17 Globemaster III is a cargo/troop transport which has an unlimited range with aerial refueling. With a crew of three, the C-17 was tested in AEDC's 16-foot transonic wind tunnel.



E-3B Sentry

The E-3B Sentry (AWACS) provides airborne surveillance, command, control and communication. With a crew of between 17 – 23, the E-3B has a range of more than eight hours unrefueled. A scale model of the AWACS was tested at AEDC in 1969 in the center's 16-foot transonic wind tunnel. The TF-33, the aircraft's engine, was tested at the center's Engine Testing Facility.



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GPS (Global Positioning Satellite)

A full scale GPS (Global Positioning Satellite) was tested in the Mark I space simulation chamber at AEDC in 1977. The tests checked reliability of the satellites systems prior to its launch in 1978.



Patriot Missile

The Patriot Air and Missile Defense System is the world's most advanced ground-based air defense system. Patriot is a long-range, high-altitude, all-weather system designed to defeat advanced threats, including aircraft, tactical ballistic missiles, and cruise missiles. AEDC's Range G Hypervelocity Ballistic Facility tested the lethality of the PAC-3 missile, an integral part of the third configuration phase.



JDAM

The Joint Direct Attack Munition (JDAM) is a guidance tail kit that converts existing unguided free-fall bombs into accurate, adverse weather "smart" munitions. With the addition of a new tail section that contains an inertial navigational system and a GPS guidance control unit, JDAM improves the accuracy of unguided, general purpose bombs in any weather condition. AEDC tested a full-scale Joint Direct Attack Munition in the 16-foot transonic wind tunnel.

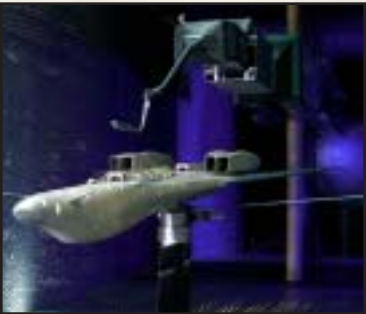
F/A-18 Hornet

The F/A-18 Hornet is a supersonic, all-weather fighter and attack aircraft. The single-seat Hornet is the nation's first strike-fighter. Designed for traditional strike applications such as interdiction and close air support without compromising its fighter capabilities, it has excellent fighter and self-defense capabilities. AEDC conducted airframe and engine aerodynamic and weapon store separation testing on the FA/18 in the center's 4-foot transonic wind tunnel.



JSOW

The Joint Standoff Weapon (JSOW) is a key program that will replace five types of the older air-to-ground weapons currently in the naval inventory. JSOW will be usable in adverse weather conditions and will give aircrews the ability to attack multiple targets in a single sortie. The JSOW family uses a common weapon body for all variants. fragmentation capability. A 10-percent scale model of JSOW was mounted on a moveable support for separation testing on a 10-percent scale model of the B-1B Lancer aircraft in AEDC's 16-foot transonic wind tunnel.



B-52 Stratofortress

The B-52 Stratofortress is a long-range, heavy bomber that can perform a variety of missions. The bomber is capable of high subsonic speeds at altitudes up to 50,000 feet. It can carry nuclear or precision guided conventional ordnance with worldwide precision navigation capability. The B-52's TF33 engine was tested at AEDC's Aeropropulsion Systems Test facility (ASTF) in 1995 to baseline the engine's cold weather starting capability and range performance with JP-8 jet fuel.



Galaxy

C-5 Galaxy is a long-range, heavy cargo transport. The plane carries a load of seven and a range of 7,273 miles without cargo. Tests on the C-5 in 1965 at AEDC helped Lockheed engineers partially reduce drag in the final configuration. The tests were run in the 16-foot transonic wind tunnel. AEDC tested the C-5's engine, the TF-39 in the Development Test Cell 2.



C-141 Starlifter

The C-141B Starlifter is the "workhorse" of the Air Mobility Command - fulfilling a spectrum of airlift requirements through its ability to airlift combat forces over long distances, deliver those forces and their equipment either by air, land or airdrop. A C-141 Starlifter scale model underwent testing in AEDC's 16-foot transonic propulsion wind tunnel. Engines were also tested at the center's ASTF.



ALCM

The Air-Launched Cruise Missile (ALCM) is a long-range subsonic cruise missile armed with a nuclear warhead and carried and launched internally and externally from the B-52 bomber at high and low altitudes. The ALCM attacks targets while allowing a bomber aircraft to remain beyond the threat of an enemy's most severe air defenses. AEDC performed aerodynamic and engine testing on the ALCM in the 1980s.



Tomahawk

The Navy Tomahawk Cruise Missile is a long range, subsonic cruise missile, conventionally armed for anti-surface warfare, and conventionally and nuclear armed for land attack versions. It is an all-weather submarine or ship-launched anti-ship or land-attack cruise missile. The Tomahawk Cruise Missile, including the engine, used against Iraq during Operation Desert Storm, were tested at the AEDC in one of the center's 16-foot wind tunnels.



AIM-9 Sidewinder

The AIM-9M Sidewinder is a heat-seeking, short-range, air-to-air missile carried by fighter aircraft. It has a high-explosive warhead and an infrared heat-seeking guidance system. Its main components are an infrared homing guidance section, an active optical target detector, a high-explosive warhead and a rocket motor. AEDC performed aerodynamic testing on the Sidewinder missile.



F-22 Spirit

The F-22 Spirit is a stealthy flying wing that serves as a multirole bomber, capable of high subsonic speeds and an intercontinental range. It has a nuclear and conventional strike capability. AEDC engineers performed test work on scale models of a B-2 Spirit bomber in the 16-foot transonic wind tunnel.